IN THE CLAIMS:

Claim 1 (currently amended): A capacitively coupled radiofrequency plasma reactor (1, 20) comprising:

at least two electrically conductive electrodes (3, 5) spaced from each other, each electrode having an external surface (3a, 5a),

an internal process space (13) enclosed between the electrodes (3, 5),

gas providing means (7) for providing the internal process space (13) with a reactive gas,

at least one radiofrequency generator (9) for frequencies greater than 13.56 MHz connected to at least one of the electrodes (3, 5), at a connection location (9a), for generating a plasma discharge in the process space (13),

means (8) to evacuate the reactive gas from the reactor,

at least one substrate (15) with a largest dimension of at least 0.7 m, defining one ~~limit~~ boundary of the internal process space, to be exposed to the processing action of the plasma discharge, said at least one substrate (15) extending along a general surface (15a) and being arranged between the electrodes (3, 5),

characterized in that said plasma reactor (1, 20) further comprises at least one dielectric layer (11) extending outside the internal process space, [[as]] the dielectric layer being a capacitor that is electrically in series with said substrate (15) and the plasma, said dielectric layer (11) having capacitance per unit surface values which are not uniform along at least one direction of said general surface (15a), for generating a given distribution profile, ~~especially~~ for compensating a process ~~non-uniformity~~ in a non-uniform manner along said general surface (15a) in the reactor.

Claim 2 (withdrawn): A capacitively coupled radiofrequency plasma reactor comprising:

at least two electrically conductive electrodes (3, 45) spaced from each other, each electrode having an external surface (3a, 5a),

an internal process space (13) enclosed between the electrodes (3, 5),

gas providing means (7) for providing the internal process space with a reactive gas,

a radiofrequency generator (9, 91) for geneating a plasma discharge in the process space (13), said generator connected to at least one of the electrodes (3, 45) at a connection location, preferably centrally arranged on said electrodes,

an additional radiofrequency generator (93) connected to at least one of the electrodes (3, 45), for increasing the ion bombardment on said substrate,

means (8) to evacuate the reactive gas from the reactor,

the at least one substrate (35) defining one limit of the internal process space to be exposed to the processing action of the plasma discharge, said at least one substrate extending along a general surface and being arranged between the electrodes,

characterized in that said plasma reactor (1, 20) further comprises at least one dielectric layer (95) extending outside the internal process space, as a capacitor electrically in series with said substrate (35) and the plasma, said dielectric layer (11) having capacitance per unit surface values which are not uniform along at least one direction of said general surface (15a), for generating a given distribution profile, especially for compensating a process non uniformity in the reactor.

Claim 3 (currently amended): The reactor of claim 1, characterized in that said dielectric layer has a thickness (e_1) along a direction perpendicular to the general surface of the substrate, said thickness being non uniform along said dielectric layer, so that the reactor has ~~said location dependent~~ a location-dependent capacitance per unit surface values along the general surface.

Claim 4 (currently amended): The reactor according to claim 3, characterized in that:

the said dielectric layer ~~(15)~~ (11) is the thickest in front of the location in the process space (13) which is the ~~farest~~ furthest away from said connection location (9a) where the radiofrequency generator is connected to said at least one electrode,

and said thickness decreases from said process space location as the distance between the process space location and the connection location on the corresponding electrode decreases.

Claim 5 (currently amended): The reactor according to claim 1, characterized in that said dielectric layer ~~(15)~~ (11) has at least one non planar-shaped external surface.

Claim 6 (previously presented): The reactor according to claim 1, characterized in that at least one of said electrodes has a non planar-shaped surface facing the substrate.

Claim 7 (previously presented): The reactor according to claim 1, characterized in that:

said one dielectric layer is locally delimited by a surface of one of said

electrodes (5a, 41b, 51b), and

said delimitation surface of said one electrode is curved.

Claim 8 (previously presented): The reactor according to claim 1, characterized in that said dielectric layer comprises at least one of a solid dielectric layer and a gaseous dielectric layer, or a combination of the both mentioned.

Claim 9 (withdrawn): The reactor according to claim 1, characterized in that the at least one substrate comprises a plate having a non planar-shaped external surface.

Claim 10 (withdrawn): The reactor according to claim 1, characterized in that the at least one substrate (65) has a curved shape.

Claim 11 (withdrawn): The reactor according to claim 1, characterized in that spacing members are arranged between said substrate (35', 65) and one of the electrodes (25, 45), said spacing members having elongations being non uniform.

Claim 12 (withdrawn): The reactor according to claim 11, characterized in that the spacing members (89) at the non-substrate-end being surrounded by a space (91), for at least partially compensating the electromagnetic perturbation induced by the contact between the spacing member and the substrate.

Claims 13-15 (canceled).